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The Repressed Inflation and Inflationary Overhang under Socialism

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The Repressed Inflation and Inflationary Overhang under Socialism

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The Repressed Inflation and Inflationary Overhang under Socialism

(Abstract)

The paper discuss the macroeconomic causes and consequences of the repressed inflation in the centrally planned economies. There are supply shortages leading to the forced savings and so-called inflationary overhang. Some of these compulsory savings are not invested and thereby it results in allocative inefficiency and relatively slower growth of output. Chronic disequilibrium and shortages, with their negative implications for economic efficiency, appear as a main feature of contemporary socialist economy. The paper takes a closer look at the notion of inflationary overhang and in particular at the socio-economic process that lies behind the repressed inflation.

Repressed inflation is a systematic feature of a socialist economy. Since there are not hard budget constraints behind the scenes, the economy generates excess demand, which tends toward chronic shortage.

As a direct consequence of the shortages,[1] the household sector is left with compulsory savings. Because this phenomenon in centrally planned economies occurs continuously, these compulsory savings accumulate with the passage of time. The result of this long-term cumulative process is the overgrowth of involuntary savings and a stock of unspendable disposable income in the household sector, which will be called here an inflationary overhang.

It is usefull to take a closer look at this notion and in particular at the socio-economic process that lies behind it. In this paper we give special attention to the nature of this inflationary overhang, to the mechanism by which it is formed, and to its movement overtime. The theoretical analysis is then applied using data for Poland. This country faces the highest inflation among all the socialist countries (with the exception of Yugoslavia). What is more, Polish inflation in recent years is the best example of so called dual inflation, i.e. both an open (price) inflation plus represed inflation do to the inflationary overhang. Because of the deep economic crisis which has affected Poland in the 80's we have witnessed not only a very high rate of inflation but simultaneously the highest rate of shortage and - consequently - the largest inflationary

overhang. Some results of estimation of the shortage and inflationary overhang will be presented, as well as a description of the method of estimation.

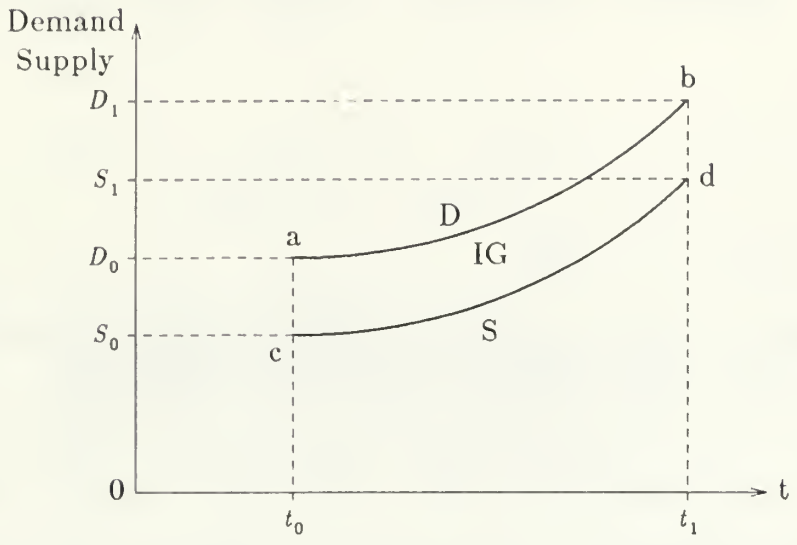
It is necessary to emphasize, however, that the Polish case is an extreme one. In the other socialist countries both the rate of open inflation and the rate of shortage (and hence, the magnitude of the inflationary overhang) are much smaller, although they vary from country to country.

The Inflationary Gap and Overhang

In the economic literature an excess of demand for consumer goods and services over the supply (at a given level of prices) is defined as an inflationary gap. It reflects the general state of market imbalance coming primarily as the result of excessive investment of national income without commensurate savings, and a disruption of the linkage between the growth of the population's money income and the increase in labor productivity. The causes of the inflationary gap are rooted both in the real sphere of the national economy (i.e. the size and structure of production and investments, the balance of payments etc.) and in the control sphere.[2]

The size of the inflationary gap is determined by the difference between the total demand for goods and services and their total supply (Figure 1). It is an extremely important characteristic of the market in centrally planned economies that there is not a point of intersection of the

Figure 1. *The inflationary gap*



D – demand in $(t_0 - t_1)$ period
S – supply in $(t_0 - t_1)$ period

curve of the aggregate quantity demanded and the aggregate quantity supplied. The former is always above the latter. The size of the inflationary gap (area abcd in Figure 1) is equal - assuming continuous supply and demand functions - to:

$$(1) \qquad IG = \int_{t_0}^{t_1} [D(t) - S(t)]dt$$

where: IG - inflationary gap in (t_0-t_1) period
D - aggregate quantity demanded
S - aggregate quantity supplied

In estimating IG in practice, major complications emerge in defining the level of demand for money and the demand (or desire) to hold liquid asset balances and not to spend them.[3] This notion comprises the increase of voluntary savings, including increase of the population's transaction money. This increase is a function of the propensity to save but it is quite difficult to find out the correct value of this propensity under circumstances of market disequilibrium what means that the population's savings are in part compulsory. So, in practice the estimation of the rise of the population's liquid asset balances held voluntarily lends itself to an arbitrary manipulations, which may be used for either overestimating or underestimating the actual level of effective demand and - consequently - the actual level of excess demand. This is because the former is treated as a residual value, obtained after subtracting the amount of this increase from

disposable income, or the population's total money income minus this rise and minus the rigid payments on account of credit repayments and taxes. So, we have:

(2) $D_e = I_d - \Delta M_w$

or:

(3) $D_e = I - (\Delta M_w + C + T)$

where:

D_e - effective demand of the household sector
I_d - disposable money income
I - total money income
M_w - increment of population's liquid asset balances held voluntarily
C - credit repayments of the population
T - taxes paid by the population

Than the excess demand (at a given period of time), which in our way of reasoning is equal to the inflationary gap, is defined as follows:

(4) $D_f = IG = I - (\Delta M_w + C + T) - S$

where:

D_f - the flow of excess demand
S - aggregate quantity supplied

The inflationary gap can be expressed in both ex ante and ex post terms. In the former case, it reflects the amount of excess demand, compared to the supply, at a given period of time, in constant prices. If the shortage continues during the period of plan implementation - as a result of absence of higher-than-planned shipments to the market and/or insufficient scope of inflationary price increase - there emerges an ex post inflationary gap, which directly leads to the accretion of compulsory savings. And

this is the essence of market disequilibrium under centrally planned economy.[4] It has a host of adverse consequences, both for the satiation of societal needs and for the whole process of macroeconomic reproduction. It is accompanied by the waste of leisure time (shopping queues etc.)., enforced substitution (requirements have to be met by the available goods with lower utility), redistribution of income and wealth, the operation of the black and so-called "gray" markets, various forms of rationing, bribery, and other pathologies in the distribution and consumption as well as in the production. This situation also results in a relatively lower level of economic efficiency. The absence of any competition among the firms is not conducive to cost reduction and quality improvement - rather the converse is true. Basis for motivation of labor is eroded, and this in turn is not conducive to an increase in labor productivity.

In addition, the disequilibrium prices fail to provide the economic entities (both enterprises and households) with proper information about the real costs of production and about scarcity or abundance of particular commodities. As a result the allocation of production factors is far from optimal.

The persistance of an open ex post inflationary gap results in a growth of the population's compulsory savings, from one period of time to another, which leads to the emergence of the inflationary overhang. The latter may thus come into being only when the price rise necessary for the

balancing of demand and supply is hampered. Therefore, it is not as a rule known in market economies, where (barring exceptional periods[5]) an open ex ante inflationary gap is always closed with the increase in the prices, coming as a result of the operation of the law of demand and supply. So, while inflation is a worldwide phenomenon,[6] the inflationary overhang may emerge only in a centrally planned economy, where prices are more or less set by the state.

It would be a mistake to identify the notion of the inflationary overhang with that of the inflationary gap. From the economic point of view, this may be justified only as far as the portion of the inflationary overhang carried over to the current period (in the form of compulsorily-deferred demand from the past) adds to current demand. Then by shifting the demand curve to a higher level, the inflationary overhang contributes to the gap between the total demand at a given period of time[7] and the total supply of consumer goods. But if the inflationary gap is to be understood as an excess of demand generated by current money income over current supply, then the differentiation between the categories of inflationary gap and inflationary overhang is necessary for both theoretical and practical reasons, and has important implications for the whole anti-inflationary policy.

The balancing of current income with supply requires one set of measures, and the elimination of the inflationary overhang requires another. In general terms, however, if

either of these two lines of action is to succeed, the following is imperative: proper macro-proportions of the GNP distribution into investments and consumption, output growth coupled with changes in its structure towards greater share of consumer goods, and growth of labor productivity coupled with its adequate remuneration.

Subordinate to this should be the economic policy as a whole and changes in the economic and financial mechanism, carried out as part of necessary economic reform.

Summing up, the inflationary overhang, at a given moment of time, is a stock quantity, while the inflationary gap, at a given period of time, is a flow of money which has no equivalent in the supply of commodities or other assets.

Inflationary expectations

In most general terms, the inflationary overhang is equal to that part of the money reserves kept at a given moment by the population which the latter is willing to spend-at a given level of prices-on goods which cannot be obtained on the market. In other words anyone unable to spend his or her income[8] contributes to the inflationary overhang.

While it is obvious that the latter is a result of a continuous inflationary gap (ex post), it would be erroneous to treat it as a simple sum of the inflationary gaps in the past.

This is because the amount of the inflationary overhang is not just a function of economic development. It also depends on psychological, social, and political factors. Therefore, changes in it are a result of both the current amount of the inflationary gap and - sometimes, as the main factor - society's behavior in the face of inflation, i.e. of inflationary expectations. This behavior runs the gamut of potential and real reactions of consumers and producers to the expected changes in the market situation (the supplies of factors, intensity of shortage, price rises, extent of rationing, scale of enforced substitution, tax burden, interests on credits and bank deposits, etc.). The inflationary expectations of the society cover psycho-social phenomena which breed on the basis of real - and sometimes imaginary - economic processes.

The point is that fears of further intensification of inflationary processes or continuation of adverse trends developing so far (a sort of "inflation scare") may lead to the materialization of some potential processes which otherwise would not develop.[9] For example, fears of insufficient supply of some goods or expectations of further inflationary price rise may result in increased purchases of these goods for hoarding purposes, which in turn may result in price increases or rationing schemes[10] not contemplated before. In conditions of repressed inflation, the consequences of these phenomena may take other forms - lengthening shopping lines, growing black market and

profiteering.[11] With administrative price control, all these ailments may occur simultaneously, if only to a different degree.

The inflationary expectations thus exert heavy influence upon the level of effective demand. Changes in the sphere of public consciousness are of decisive importance for the formation of the propensity to save voluntarily, i.e. to defer the demand generated by the flow of the population's current money incomes till the future.

Any expectations of further inflationary rise of prices and/or increase in shortages, broadening of rationing, or longer queing lines, lead to a growth of the inflationary overhang. This results from the fact that, in the face of such expectations about market trends, the population decides to convert more quickly a larger-than-before part of accumulated liquid assets and currently-earned income into particular use values, so as to protect their liquid asset balances against growing money depreciation. But on the macro-scale, this is <u>not</u> possible. Some customers waiting in the shopping queues will <u>always</u> be unable to fulfill their intention to purchase (barring cases where the queues come as a result of poor retailing services rather than short supply). Besides, many potential customers do not even join the queue, prizing more their leisure time and not willing to risk its waste.[12]

On the other hand, progress in balancing the market directly reduces the inflationary overhang. Hence the key

importance-for this process-of the restoration of equilibrium between demand generated by current income and current supply. In such conditions, the population treats the liquid assets accumulated in the past in a different way - and the pace and scope of reducing the inflationary overhang depend in large measure on the structure of the demand compulsorily deferred in the past.

Without generating a surplus of supply (corresponding structurally to the requirements expressed by the effective demand that was not satisfied in the past because of the shortages) over current income, total elimination of the inflationary overhang will prove impossible. Therefore, it is not only its size, that matter but also the pattern of the demand generated by forced savings. In other words, the goal is to answer the question of what the potential buyers would like to spend money on, given a sufficient level of supply. Furthermore, it should provide signals both for the authorities and autonomous enterprises about proper allocation of investment resources.

We can describe an inflationary overhang as a sum of the inflationary gaps in the past, $(t_o - t_n)$, corrected for the results of inflationary expectations.

$$(5)\quad IO = e_0 \int_{t_0}^{t_1} [D(t)-S(t)]dt + e_1 \int_{t_1}^{t_2} [D(t)-S(t)]dt + \ldots$$

$$\ldots + e_{n-2} \int_{t_{n-2}}^{t_{n-1}} [D(t)-S(t)]dt + e_{n-1} \int_{t_{n-1}}^{t_n} [D(t)-S(t)]dt$$

or:

$$(6)\quad IO = \sum_{i=0}^{n-1} e_i \int_{t_i}^{t_{i+1}} [D(t)-S(t)]dt$$

where:

IO - inflationary overhang

e - coefficient of the influence of inflationary expectations.

The point is how to estimate the coefficient (e). We should take into consideration two processes which exert heavy influence upon the amount and the structure of the inflationary overhang. These are:

- the neutralization of the inflationary overhang, and
- the transformation of the character of savings.

These processes develop simultaneously, and their importance - which depends on the current market situation and the character and scope of inflationary expectations - changes with time.

The Shortages and Households' Savings

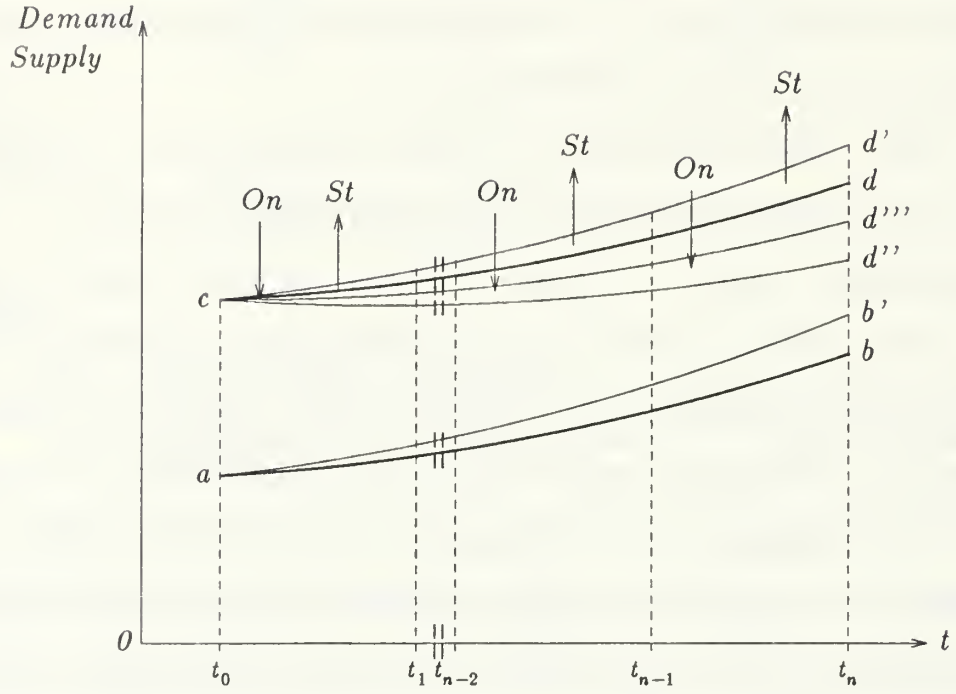
The neutralization of the inflationary overhang means that the population's compulsory savings are transformed with the passage of time into liquid assets of another character. This is a multi-pronged process. Of special

importance for its course is the substitution of current needs with a need for saving, i.e. for meeting particular needs in the future. This means that compulsory savings are being transformed into voluntary savings as a result of changes in consumer preferences.

The neutralization of the inflationary overhang may also take the form of the transforming part of it into transaction money. These are the liquid assets necessary for the current running of households, private farms, and private businesses. No saving motives apply to them, since they are connected exclusively with the cycle of economic activity stemming from timetables for the earning of money income. From the macroeconomic point of view, these balances have to be steadily renewed, and cannot result in a growth of demand. This aspect of neutralization is reflected in the fact that a portion of relatively low-income households are forced to finance the growth of their transaction reserves (necessitated by increasing prices) by digging into the previously accumulated compulsory savings.

In conditions of market disequilibrium, the so-called second (parallel) economy and speculatory capital is growing. It is both one of the consequences of imbalance and a secondary cause of the deepening of the latter. At the same time, by absorbing a portion of liquid assets for transaction purposes, it contributes to some extent to the reduction of the inflationary overhang. The problem is that it provides an additional source of redistribution effects

Figure 2. *The formation of the inflationary overhang as dynamic process*



of inflation and leads to many adverse consequences of socio-political nature. The speculatory capital also fuels inflation, because its existence speeds up the velocity of money circulation.

An opposite tendency to the neutralization of the inflationary overhang takes the form of the transformation of voluntary savings into compulsory savings. This transformation may concern savings accumulated either for prudency or for specific purposes. In the latter case, the transformation mechanism operates in such a way that the savings systematically earmarked for the purchase of a relatively expensive goods always prove too low as a result of rapid increase in prices. In the face of this, the potential buyer changes his preferences and decides to spend the accumulated savings for other purposes. If he wants to buy a good in short supply, although the supply might have been adequate before, then the savings originally seen as voluntary may turn compulsory, thus adding to the amount of the inflationary overhang.

Let us now demonstrate the formation of an inflationary overhang as a dynamic process (Figure 2).

The area abd'''c indicates the amount of the inflationary overhang at t_n. Only in a particular case this amount is equal to the amount of aggregated inflationary gaps (area abcd in Figure 2) namely in the case in which the effects of the transformation of the character of savings (what illustrates the shift of demand curve from

cd to cd') and the effects of the neutralization of the inflationary overhang (what illustrates the shift of demand curve from cd to cd") cancel each other. This case appears when St=On (or: St-On = 0), i.e. when area cdd'=cdd".

In the case described in Figure 2, instead, positive effects of the neutralization of inflationary overhang (On) exceed negative effects of the transformation of the character of savings (St), because cdd">cdd', otherwise On>St. So, the amount of aggregated inflationary gaps in the period (t_o-t_n) is corrected for this dissimilitude. It means that in this case the coefficient e_i<1 (see equation (5) and (6)). Hence it follows that abd'''c<abdc.

Such a drift is possible - although the current inflationary gaps in the period (t_o-t_n) do not diminish <u>in absolute terms</u> - because in the succesive years <u>ex post</u> inflationary gap is reduced <u>relatively</u>. This is because the nominal amount of inflationary gap must be observed on the background of the real increase of both the demand and the supply.

We can thus argue that the transformation of savings from voluntary to compulsory forms and the neutralization of inflationary overhang is the more successful, the larger is the decrease in the current inflationary gap (both in the nominal and real aproach). Therefore, in the case when bd<ac as a rule On>St and - consequently - abd'''c<abdc.

So far, we have ignored the influence of the increase of supply, assuming that the latter is given. Actually, instead, the progress in market balancing - if it takes place - favors the supply growth. Therefore, we can assume that in face of such a tendency the supply increases faster than demand, which is indicated by an upward shift in the supply curve during the period (t_o-t_n) from level ab to level ab'. Then not only the amount of the inflationary gap in particular segments of the period (t_o-t_n) is reduced, but also the entire inflationary overhang for this period. In this case, finally, the amount of the inflationary overhang is described in Figure 2 by the area ab'd'''c.

We may thus claim that the pace and scope of inflationary overhang neutralization are functions of the manner in which the inflation gap is closing and the time horizon for this closure. But it is necessary to emphasize again that so far it remains open in the socialist countries, though the amount of open ex post inflationary gap varies.[13]

The Residual Method for Computing the Inflationary Overhang

The cumulative method for estimation the value of the inflationary overhang cannot be applied in practice, since the overhang may be either lower or higher than the aggregate amount of the inflationary gaps in the past - and we have no satisfactory method for computing the deviations, i.e., the value of coefficient (e). Even sophisticated

econometric models are not useful in this case, primarily because of strong influence of the exogenous factors - first of all of political nature - on the attitude of the population toward inflation under socialism.[14] Therefore, the amount of the inflationary overhang should be estimated as a residual value, obtained after deducting the sum of voluntary savings and transaction money from the total value of the population's liquid asset balances:

$$(7) \qquad IO = R_m - (S_v + T_r)$$

where:

R_m - population's total liquid asset balances
S_v - voluntary savings
T_r - transaction money

In our way of reasoning the right side of the equation (7) is therefore equal to the right side of equation (6), i.e.

$$(8) \qquad R_m - (S_v + T_r) = \sum_{i=0}^{n-1} e_i \int_{t_i}^{t_{i+1}} [D(t) - S(t)]dt = IO$$

The application of the residual method is not free from methodological complications. They concern, in the first place, the problems involved in correct and accurate estimation of the amounts of voluntary savings and transaction money. There are no objective, unequivocal methods permitting accurate assessment of these two components of the population's liquid assets, especially in conditions of chronic market disequilibrium. At one point or another, they have to be based on some conventional assumptions, which by nature are imperfect and debatable.

But the list of arbitrariness of these assumptions is not yet complete. They rest on observations of many developments and processes connected with consumers' time-related preferences, households' management of liquid assets, the drifts of the propensity to save, the pace of rotation of the population's bank deposits, the velocity of money , etc.[15]

In estimating the order of the magnitude of the inflationary overhang, we assume that the voluntary savings cover the population's liquid assets placed in bank accounts in the form of a special-purpose and long-term deposits and a portion (around one-third) of demand deposits. The voluntary savings should thus be understood as all deposits for some specific purposes or for the sake of prudence. In other words, they are a function of the population's subjective willingness to place saving deposits in relevant state institutions. As for the transaction money, their estimates are based on the assumptions concerning the average income earned in the three major groups of the population in definite time periods - half a month for wage earners and social-benefit recipients, and one and half months for private farms and private businesses.[16]

The compulsory savings of the population in the form of bank deposits, are - in accordance with the adopted assumptions and estimation method - simply the difference between the sum total of demand deposits and their part performing the function of transaction money.

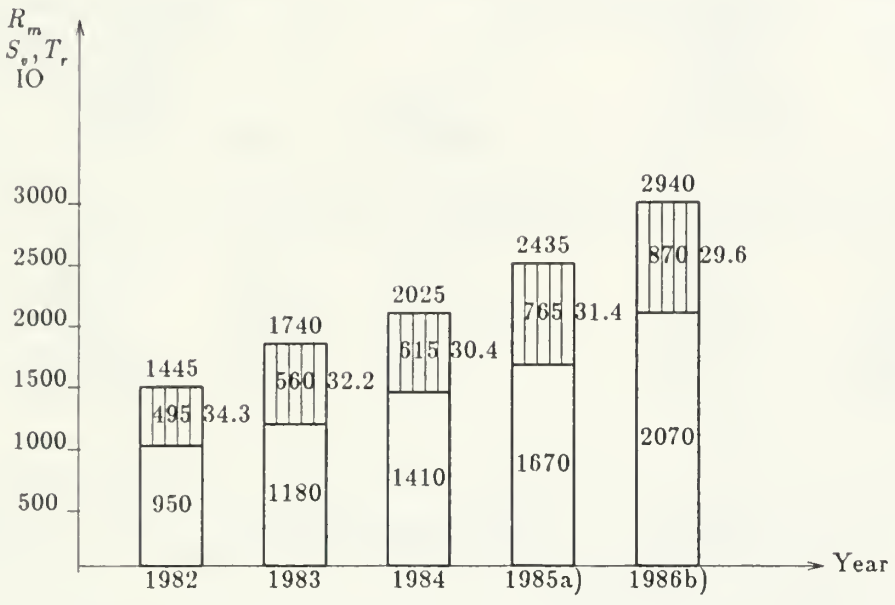
Measures of Total Savings in Poland

Knowing these estimates, it is possible to determine - by the residual method - the amount of the inflationary overhang in Poland, which is the most spectacular example of the issue, consisting of the compulsory savings kept by the population at a given moment of time in the form of both bank deposits and cash (Figure 3).

The nominal amount of the inflationary overhang is still increasing. This process continues and will continue until the ex post inflation gap is closed. It seems very unlikely that the intensification of the overhang-neutralization process could be so wide as to eliminate - with the ex post inflation gap - the consequences of the simultaneous transformation of the character of savings and the current increase in forced savings. This means that the nominal amount of the inflationary overhang will grow as long as demand generated by current incomes is not balanced with the supply of consumer commodities. Such a situation is very characteristic for recent years (Table 1).

At the same time, the real purchasing power represented by the liquid assets "frozen" in the inflationary overhang fell (Table 2) as a result of the depreciation of the currency following the inflationary price rise which in Poland was on the average during 1981-85 around 35%.[17]

Figure 3. *The population's money reserves, voluntary savings and inflationary overhang in Poland in 1982 –86 [bilion ZL]*



a) preliminary estimation
b) forecast

inflationary overhang (IO)

population's voluntary savings including transactions reserves ($S_v + T_r$)

The figures outside boxes indicate the percentage share of the inflationary overhang in the total population's money reserves.

Source : own calculation

Table 1: The coefficients of creating the population's liquid assets in Poland in 1982-86.[a]

Year	Population's Total Liquid Asset Balances	Bank Deposits	Cash	Population's Liquid Assets Held Voluntarily	Compulsory Savings
1	2	3	4	5	6
1982	11.99	6.11	5.88	5.92	6.07
1983	7.19	4.77	2.42	4.99	2.20
1984	5.91	3.82	2.09	4.70	1.21
1985[b]	7.03	4.02	3.01	4.50	2.53
1986[c]	5.87	3.35	2.52	4.50	1.37

a) The increment of the population's liquid asset balances as a percentage of disposable income
b) Primary estimation
c) Forecast

Source: Columns 2-4: data from National Bank of Poland, columns 5-6: own calculations.

This means that the real purchasing power of the overhang - after certain improvement in 1983-84 - at the end of 1986 may represent about the same purchasing power than four years earlier.

Next to the nominal increase and real stabilization of the inflationary overhang during 1982-86, recent developments were marked by the relative decline in the ratios of the overhang to various flows and stocks characterizing the market situation and its trends. In particular, it should be noted that the amount of the overhang at the end of 1982 represented 142% of the value of consumer goods inventories, compared to about 95% in 1984-1985.

Table 2: The indices of the nominal and real value of the inflationary overhang in Poland in 1983-86

Index	1983	1984	1985[a]	1986[b]
1	2	3	4	5
The amount of the inflationary overhang (in billions of zlotys)	560	615	765	870
Nominal value of the overhang in 1982=100	113.3	124.7	155.2	176.5
Nominal value of the overhang in previous year =100	113.3	110.0	124.4	113.7
Rate of inflation	21.9	14.8	12.5	10.0
Real value of the overhang in 1982=100	92.1	88.2	102.5	99.2
Real value of the overhang in previous year = 100	92.1	95.7	110.6	103.4

a) Primary estimation
b) Forecast

Source: Own calculation. Rate of inflation for 1983-84 from Maly Rocznik Statystyczny 1985(Statistical Yearbook 1985), GUS, Warszawa 1985; for 1986 from Central Annual Plan.

However, the share of the inflationary overhang in the total population's liquid asset balances remains on the same level during 1985-86 as in 1982. Besides, the level is extremely high and amounts to about 30%. It should be pointed out that the real value of inflationary overhang is equal to about 15% of population's total consumption of the goods and services purchased at the market, or to about 4% of GNP.

Conclusions

The inflationary overhang is an economic phenomenon which appears only under the conditions of chronic repressed inflation. It is a common feature of centrally planned economies. Since in the socialist economy there are not state bonds, the excess issue of the banknotes serves as a substitute of the issue of the bonds, and in that sense is similar to a public debt. This type of public debt actually is an additional channel of inflationary redistribution of income to the state sector and away from the household sector. The amount of this redistribution - within a given period of time - is equal to the amount of the depreciation of the real value of inflationary overhang.

So, the inflationary overhang can thus be of benefit to the government, and can have negative consequences for the household sector, i.e. the consumers since they have the purchasing power but cannot gain access to the goods. The chronic shortages - as direct result of repressed inflation - cause lower economic efficiency, which is also the detriment of economic growth. Lower consumer prices do, however, help to redistribute real income to the lower and middle income groups. In long-term the inflationary overhang affects all sectors, i.e. the state, firms and households, by achieving some redistribution, but leads to a loss of time spent queing and a lose in allocative efficiency.

In the centrally planned economy, there are supply shortages leading to forced saving, some of which is not invested and thereby it results in slow groth of output not only for that reason but because of allocative inefficiency. In the market economy there are not supply shortages, but instead surpluses of goods and larger stimulus to consumption, with not excess forced saving but instead too little saving. This then in turn also results in slower growth.

In the centrally planned economy, if prices are held down leading to shortages and allocative inefficiency, that is not all that different from the market economy where there are price supports, followed by surpluses, there is then also allocative inefficiency.

A case can be made for tampering with the price system when there is market failure. Market failure can occur, of course, when there is monopoly, or when there are externalities. In the case of externalities, again the price system does not work, and there must be subsidies to get a sufficient quantity of the public good in question produced. But using the price system in other situations, the interference with the price system as a means of trying to get income distribution, may have some of the adverse allocative inefficiency and forced saving effects.

A further increase of economic efficiency and the acceleration of economic growth under socialism require important systematic reforms. These must involve both the

successive elimination of the inflationary gap, and also a means of collecting up the excess liquid assets which represent an inflationary overhang. This is necessary because chronic disequilibrium and shortages, with their negative implications for economic efficiency, appear as a main barrier of economic development in contemporary socialist economies.

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Notes

1. The shortage is an economic category concerned also with the capital and the labor. But this aspect of issue is left - because of the delimitation of space - besides the scope of our considerations.
2. We use the term "control sphere" instead of "monetary sphere" because money does not perform an active role in centrally planned economy. On this subject see outstanding book by Kornai (1980) and his macrodynamic model of a socialist economy - Kornai (1982).
3. In the economic literature in the socialist countries it is used to call it as economically-warranted growth of the population's money reserves.
4. See Kolodko (1986).
5. On the subject of repressed inflation in a capitalist economy see Charlesworth (1955). Although his considerations have regard to the repressed inflation in Great Britain during the World War II and the years following the war many of the author's conclusions are of present relevance to the experience of a socialist economies.
6. It seems to be worthwhile to emphasize that overwhelming majority of the monographs dealing with the worldwide inflation do not give any attention to the inflation under socialism. See, for instance, Krause and Salant (1977), Lindberg and Maier (1984), and Bruno and Sachs (1985).
7. One part of it is generated by current income and another by income obtained in the past.
8. At a level of prices which is too low in relation to the level of output and supply.
9. See, for instance, Higham and Tomlinson (1982).
10. Although rationing among socialist countries is most spectacular in Poland - because of the causes which have been mentioned before - it exists actualy in all socialist countries, at least in regard to the distribution of the apartments, cars, telephones and some other goods in shortage.
11. Some authors believe it is an important feature of socialist economy. As an example of such point of view we can cite Millar:

> "To play down the institutions of the market and of reprocity in the Soviet economy, however, would be as misleading as minimizing the central management activities of the President's Council of Economic Advisors, the federal budget, and the Federal Reserve Board in the determination of the level and direction of economic activity in the United States." See Millar (1981), p. 192. By the principle of reciprocity the author refers: "...to an exchange of goods or services which is conducted on the basis of relationship other than those of the market place." (p. 189).

12. For this reason, the scope of shortage and market imbalance may not be estimated on the basis of time spent in shopping lines.
13. The largest open ex post inflationary gap exists in Poland, and the lowest in Hungary. As a simple consequence, similar situation appears in regard to the amount of the inflationary overhang.
14. It is a specific feature of the inflationary overhang that its amount may change substantially in a short, even very short, period. The Polish experience during 1980-85 points out that in response to a misguided official statement or hearsay, it may increase tangible "by the hour". This opinion may be illustrated by a lot of examples concerning either official announcements or rumors of currency denomination, etc., which have always provoked the population to reassess its attitude towards its money reserves, and consequently to change their economic functions.
15. On the particular assumptions dealing with the estimation of the amount of the inflationary overhang see Kolodko (1985).
16. It is worthwhile to stress that the scope of non-socialized, i.e. non-state sectors vary from one socialist country to another. Among European socialist countries the significance of private sectors is lowest in Soviet Union and largest in Poland. In the latter in 1985 about 20% of national income was produced by the private sectors, above all by private farms.
17. Simultaneously, the average rate of interest of saving deposits was only about 8.5%. But it must be added that the average inflation rate in 1984-85 declines to about 14% against 109.4% and 21.9% in 1982 and 1983 respectively.

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